SECTION 4 – CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

This minimum control measure is a critical component of the stormwater management program because polluted stormwater runoff from construction sites often flows to storm sewer systems and ultimately is discharged into local rivers and streams. Sediment is typically the main pollutant of concern but other pollutants include solid and sanitary wastes, phosphorous (fertilizer), pesticides, nitrogen (fertilizer), oil and grease, concrete truck washout, construction chemicals and construction debris.

Sediment runoff rates from construction sites are typically greater than those of agricultural lands, and significantly greater than those of forested lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation, and the contribution of other pollutants from construction sites can cause physical, chemical, and biological harm to the state's waters.

4.1 REQUIREMENTS

The development, implementation and enforcement of a program, or modification of an existing program, is required to reduce pollutants in any stormwater runoff to the Municipal Separate Storm Sewer System (MS4) from construction activities that result in a land disturbance of greater than or equal to one (1) acre. Reduction of stormwater discharges from construction activity disturbing less than one acre shall be included in the program if that construction activity is part of a larger common plan of development that would disturb one acre or more. The program shall include but not be limited to the following requirements:

4.1.1 An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions for non-compliance, to the extent allowable under State or local law.

4.1.2 Procedures for notifying construction site developers and operators of the requirements for registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities.

4.1.3 Requirements for construction site operators to implement appropriate erosion and sediment control best management practices in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control.

4.1.4 Requirements for construction site operators to control waste at the site such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

4.1.5 Procedures for site plan review, which incorporate consideration of potential water quality impacts.

4.1.5 Procedures for receipt and consideration of information submitted by the public.

4.1.6 Procedures for site inspection and enforcement of control measures.

4.2 BEST MANAGEMENT PRACTICES

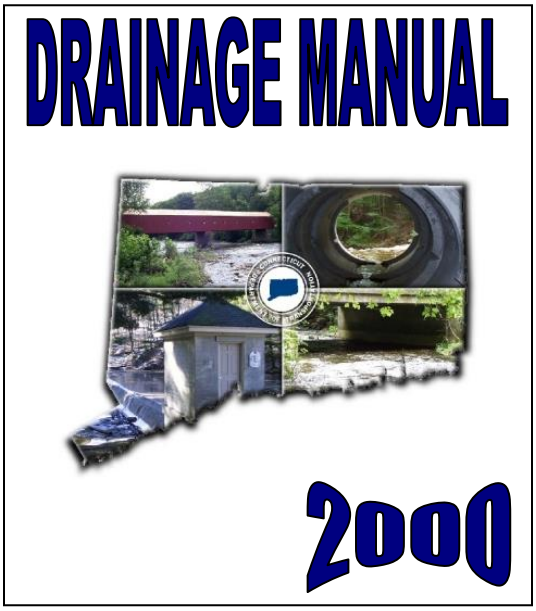
The following BMP's will be utilized in the implementation of the program to address the minimum control measure for Construction Site Runoff Control.

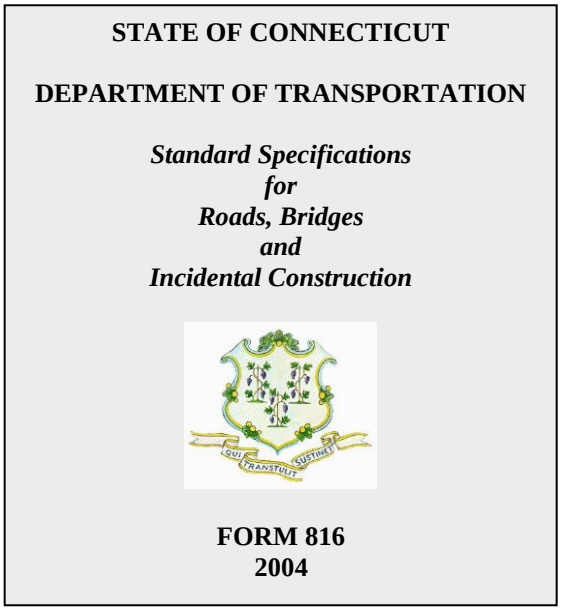
4.2.1 Requirements and Guidelines for Erosion and Sediment Controls

The Department requires erosion and sediment controls for all projects in accordance with all state and federal regulations. Several documents are utilized for establishing guidelines and procedures for the use of erosion and sediment controls in planning, design and construction for state owned or state funded projects. These documents include the following:

- CTDOT Consultant Administration & Project Development Manual, September 2008 and supplements thereto
- CTDOT Drainage Manual, October 2000 and supplements thereto
- CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 and supplements thereto
- Connecticut Guidelines for Soil Erosion and Sediment Control, DEP Bulletin 34, 2002 and supplements thereto
- CT DEEP 2004 Stormwater Quality Manual

Examples of guidance, documents, design manuals and standard specifications utilized by the Department relating to erosion and sediment control





CTDOT Drainage Manual

Erosion and sediment control is addressed in Chapter 8.5.4 of the Department's Drainage Manual. The design of outlet protection for all projects being designed or funded by the Department shall be in accordance with the Drainage Manual versus the Connecticut Guidelines for Soil Erosion and Sediment Control. Outlet protection is discussed and the procedures for designing outlet protection are contained in chapter 11.13 of the Drainage Manual. The methodology outlined in the Drainage Manual has been accepted by the CTDEEP for use by the Department.

CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816

The standard specifications directly refer to the Connecticut Guidelines for Soil Erosion and Sediment Control requiring that erosion and sedimentation control plans be prepared in accordance with the guidelines. This is outlined in Section 1.10, Environmental Compliance under Best Management Practices.

Connecticut Guidelines for Soil Erosion and Sediment Control

These guidelines are referenced by the Department's design manuals and made part of contracts by inclusion in the Department's standard specifications.

Connecticut Stormwater Quality Manual

The Connecticut Stormwater Quality Manual provides guidance on the measures necessary to protect the waters of the State of Connecticut from the adverse impacts of post-construction stormwater runoff. This manual focuses on site planning, source control, and stormwater treatment practices and is intended for use as a planning tool and design guidance document by the regulated and regulatory communities involved in stormwater quality management. BMPS's used for construction are detailed in this publication.

Ordinances, Regulatory Mechanisms and Sanctions

The Department is not authorized by state statutes to impose sanctions for non-compliance with regard to erosion and sediment control. The Department does have the authority to force corrective actions on behalf of the contractor to comply with appropriate regulations and controls. In case of failure by the contractor to perform pollution control work, the Department shall arrange for the performance of required work by approved forces. The cost of such work shall be deducted from any monies due or which may become due to the contractor under the contract or under any State contract.

Appropriate measures shall be employed by the Department to ensure compliance by

adherence to all standards put forth by the Department to ensure this BMP is enforced.

4.2.2 Procedures for Notifying Construction Site Developers and Operators of Requirements for Registration

All projects with a total disturbance of 1 or more acres of land area on a site, regardless of phasing activities shall be registered under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities with the CTDEEP. Registration shall be submitted a minimum of sixty days if disturbance is between one (1) and (20) twenty acres or ninety days if: 1) Disturbance is greater than twenty (20) acres, 2) Dischargers to a tidal wetland within 500 feet of the discharge point, 3) Is subject to impaired waters provisions in Section 3(b) of the DEEP-WEPED-GP-015 prior to the start of construction as required by the Construction General Permit.

Section 804.09 of the Consultant Engineer's Manual outlines the requirements associated with the Construction General Permit. Construction activities as defined in the general permit include, but are not limited to, clearing, grubbing, grading, excavation, placement of fill and dewatering activities.

4.2.3 Requirements for Construction Site Operators to Implement Appropriate Erosion and Sediment Control Best Management Practices

Construction site operators are required to implement appropriate erosion and sediment control best management practices as outlined in contract plans, contract specifications and standard specifications. The Department's Standard Specifications for Roads, Bridges and Incidental Construction, Form 816 outlines the environmental protection requirements in Section 1.10 Environmental Compliance, including sediment and erosion control, which a construction site operator or contractor for the Department is bound to meet under the terms of its contract, and under federal and state laws and regulations.

The contractor is required at all times to conduct his operations in conformity with all Federal and State permit requirements concerning water, air, noise pollution and the disposal of contaminated, or hazardous materials.

4.2.4 Requirements for Construction Site Operators to Control Waste at the Site

Building materials and other construction site wastes must be properly managed and disposed of to reduce the risk of pollution from materials such as surplus or refuse

building materials or hazardous wastes. Practices such as trash disposal, recycling, proper material handling, and spill prevention and cleanup measures can reduce the potential for stormwater runoff to mobilize construction site wastes and contaminate surface or ground water.

Construction site operators shall be required to control waste including discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site, that may cause adverse impacts to water quality.

The operators are required to control the above mentioned waste by contract specifications, the Department's standard specifications, and all pertinent local, state and federal regulations.

The proper management and disposal of wastes must be practiced at any construction site to reduce contamination of stormwater runoff. Waste management practices can be used to properly locate refuse piles, to cover materials that may be displaced by rainfall or stormwater runoff, and to prevent spills and leaks from hazardous materials that were improperly stored.

The following are examples of steps that should be taken to ensure proper storage and disposal of construction site wastes:

Waste Collection

Designate a waste collection area onsite that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody.

- Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible.
- Schedule waste collection to prevent the containers from overfilling.
- Clean up spills immediately. For hazardous materials, follow cleanup instructions on the package. Use an absorbent material such as sawdust or kitty litter to contain the spill. Handling and disposal of all hazardous material shall be in accordance with all state and federal regulations.
- During the demolition phase of construction, provide extra containers and schedule more frequent pickups.
- Collect, remove, and dispose of all construction site wastes at authorized disposal areas. The CTDEEP can be contacted to identify these disposal sites.

Contaminated / Hazardous Materials

Materials will be disposed of by the Department as solid waste in accordance with the Standard Specifications, contract specifications and all applicable federal, state, and

local regulations. Contract specifications for the excavation, transporting, stock piling, securing, disposal of contaminated / hazardous materials and decontamination of equipment will include but not limited to the following:

- Environmental Health and Safety
- Contaminated / Hazardous Materials Excavation
- Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area
- Disposal of Hazardous Waste
- Environmental Work – Solidification
- Disposal of Contaminated Railroad Ties
- Controlled Materials Handling
- Disposal of Contaminated Timber Piles
- Disposal of Controlled Materials
- Management of Reusable Controlled material
- Abandonment of Wells
- Handling and Disposal of Contaminated Concrete
- Handling Contaminated Groundwater

Pesticides

The following practices should be used to reduce risks associated with pesticides or to reduce the amount of pesticides that come in contact with stormwater (the Department does not currently apply pesticides near aquatic environments):

- Follow all federal, state, and local regulations that apply to the use, handling, or disposal of pesticides.
- Do not handle the materials any more than necessary.
- Store pesticides in a dry, covered area.
- Construct curbs or dikes to contain pesticides in case of spillage.
- Follow the recommended application rates and methods.
- Have equipment and absorbent materials available in areas where pesticides are stored and used in order to contain and clean up any spills that occur.

Petroleum

The following management practices should be followed to reduce the contamination risk associated with petroleum products:

- Store petroleum products and fuel for vehicles in covered areas with dikes in place to contain any spills.
- Immediately contain and clean up any spills with absorbent materials.
- Have equipment available in fuel storage areas and in vehicles to contain and clean up any spills that occur.

Fertilizers

Phosphorous- and nitrogen-containing fertilizers are used on construction sites to provide nutrients necessary for plant growth, and phosphorous- and nitrogen-containing detergents are found in wash water from vehicle cleaning areas. Excesses of these nutrients can be a major source of water pollution. Management practices to reduce risks of nutrient pollution may include the following:

- Apply fertilizers at the minimum rate and to the minimum area needed.
- Work the fertilizer deeply into the soil to reduce exposure of nutrients to stormwater runoff.
- Ensure that erosion and sediment controls are in place to prevent fertilizers and sediments from being transported off-site.
- Use detergents only as recommended, and limit their use onsite. Wash water containing detergents should not be dumped into the storm drain system—it should be directed to a sanitary sewer or be otherwise contained so that it can be treated at a wastewater treatment plant.

Maintenance Considerations

Containers or equipment that may malfunction and cause leaks or spills should be identified through regular inspection of storage and use areas. Equipment and containers should be inspected regularly for leaks, corrosion, support or foundation failure, or any other signs of deterioration and should be tested for soundness. Any found to be defective should be repaired or replaced immediately.

4.2.5 Procedures for Site Plan Review

Procedures for site plan review which incorporate consideration of potential water quality impacts are utilized by the Department. Construction plans and specifications are reviewed by the Department's Office of Environmental Planning for conformance to the Department's requirements and federal and state permit requirements relating to construction site runoff control.

Projects requiring registration under the General Permit for the Discharge of Stormwater Associated with Construction Activities shall include site plans along with the permit application and a site specific stormwater pollution control plan for review and registration by the CTDEEP.

4.2.6 Procedures for Receipt and Consideration of Information Submitted by the Public

Procedures for receipt and consideration of information submitted by the public are utilized by the Department. Information submitted by the public is forwarded to the

appropriate unit within the Department for consideration. Information related to construction site runoff is forwarded to and considered by the Office of Environmental Planning.

4.2.7 Procedures for Site Inspection and Enforcement of Control Measures

Site inspection and enforcement of control measures are utilized on all of the Department's projects.

Inspectors employed by the Department are authorized to inspect all work performed and materials furnished for each project. The inspection may extend to all or any part of the work, and to the preparation or manufacture of the materials to be used including work and materials relating to construction site runoff control.

Additional inspection is also provided by the Office of Environmental Planning and the District construction offices.